

ART 34 AMDT
SUB
A5~~CLAIMS~~

Sub B1

1. (amended) A polymer electrolyte fuel cell comprising a unit cell composed of a polymer electrolyte membrane, a cathode and an anode each having a catalyst reaction layer and disposed across said polymer electrolyte, a separator having a means for supplying a fuel gas to said anode, a separator having a means for supplying an oxidant gas to said cathode, a current collector plate, an insulating plate and an end plate,

said fuel cell further comprising a total heat exchanger for concurrently moving heat and humidity from an discharged gas toward said fuel gas and oxidant gas being installed inside the end plates disposed on both ends of said polymer electrolyte fuel cell, or between said insulating plate and either said current collector plate or said end plate, and said total heat exchanger effecting total heat exchange via a polymer electrolyte membrane, which is the same as that constituting said unit cell and has a thickness of 25 μ m or less.

2. (canceled)

3. (canceled)